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THE SILVER BOOK OF THE GOSPELS.

FAC-SIMILE SPECIMEN OF THE SILVER BOOK OF THE GOSPELS.

THE art of printing was first brought into use by Europeans about four hundred years since, when our ancestors began to shake off their long sleep of a thousand years. Five centuries before that the Chinese began to use the same art at the opposite extremity of the Old World, when England was struggling for life against the Danes; but a sort of printing or impressing was practised in Europe perhaps fifteen, or at least thirteen centuries ago. So near indeed did this mode of impressing approach the present art of printing, that it is surprising no further progress was made. It would be a curious speculation to consider how far the complete discovery of printing might have repelled the thick cloud of ignorance which hovered so long over Europe: the effect may not perhaps have been great: the barbarous tribes who overwhelmed the civilized world might not have appreciated the art, though the subject of this article shows that, under one aspect at least, they were not inattentive to literature. One valuable result would have been, that many important works now lost would have been preserved.

Only one work is now known to exist impressed in the manner alluded to, though probably others were executed in the same way. It is a translation of part of the New Testament into a very ancient dialect of the German language, and is commonly known by the name of the Gothic Gospels, or the Silver Book. It is deposited in the Public Library at Upsal, in Sweden. This book is composed of very thin smooth vellum, of a fine purple or violet colour, and something of the shape and size of the *Saturday Magazine*. The first three lines of each Gospel, the beginning of the Lord's Prayer, and of any other important passage, and the names of the evangelists, are impressed in gold letters: the rest is all in silver. Much of the volume, in fact nearly a half, is now lost, but more than one hundred and sixty leaves are yet remaining, to show how beautiful the whole must have been when complete, and to enable an artist to judge with accuracy of the means by which the work was done.

Any one who has seen a bookbinder letter the back of a book will have a good idea of the manner in which the Silver Book was executed, for there is no doubt that the processes were very similar. A bookbinder rubs some sticky substance, such as white of egg, on the book he is about to letter, places a leaf of gold upon it, and then takes up a series of heated metal letters, one after another, and presses each in its turn strongly upon the gold leaf. The gold is firmly fixed upon the leather in the places where the impression is made, and the remaining loose gold is wiped off with a rag. This was the old process of lettering, which is still much in use, and this was the way in which the Silver Book was executed, only that silver was used instead of gold, and a cement of an oily nature instead of the white of egg.

Much dispute having arisen as to the reality of this process, Professor Ihre instituted a very minute examination of the Codex in the presence of four literary gentlemen, and came to the conclusion that the work was produced by the impression of metal types. In the first place each letter is respectively so exactly similar in form to every other, that it would be quite impossible for the best writer to imitate its perfect regularity: this argument will be best appreciated by those who have compared the very best manuscripts with any printed book whatever: they must have remarked that in print, from all the similar letters being cast in the same mould, the regularity is indisputable, however defective in other matters the execution may be. The next proof was the tangible remains of the impression: the form of every letter is hollow on the face of the vellum, and on turning to the back of the leaf, it is there found to be convex,

so palpably that the simplest touch will immediately show the place where the type has been pressed down, the margin being quite smooth and the impressed part rough. In a hundred cases the substance of the vellum has been actually cut out by the impression of the tool, while the surrounding leaf is entire. To complete the evidence, a film of a glutinous or oleaginous nature was in many parts perceptible, in a strong light, between the metallic foil and the vellum to which it had adhered.

The only argument now remaining for those who contended that the whole was written with a pen, depended on the assertion that vellum could not be impressed in that way, without wrinkling up and becoming contracted. This was however disproved by Gerard Meerman, who says, in his *Origines Typographicæ*, that his bookbinder tried the process for him, and found it succeed as well with vellum as with leather.

Some fragments of other portions of Scripture have since the discovery of the Silver Book been found in several places, particularly parts of the Epistle to the Romans, in the Library of Wolfenbuttle: these were published by Knittel, who states that they appear to have been impressed in a similar way to those of the Upsal Book. It is curious enough that this language should be the only one in which evident proofs of the practice of this art should be found. It must have been too costly for ordinary use, and perhaps the only persons rich enough to command such expensive luxuries were the monarchs of the conquering tribes by whom the language was spoken.

The history of the Silver Book is curious: it had been lying from an unknown period in the Library of Werden, near Dusseldorf. on the Rhine, until the early part of the seventeenth century, when it was removed to the city of Prague, in order to escape the ravages of the thirty years' war. When that city was taken by Konigsmark, the book came into the possession of the Swedes, and was deposited in the Royal Library of Stockholm. Very soon after this the learned Vossius became possessor of it,—how, it is not known, but he was suspected of having stolen it, while on a visit to Christina, queen of Sweden. Voss took it with him to Holland, where about seven years after it was seen in his possession by Puffendorf, who purchased it for the sum of six hundred rix dollars, on account of the Count Gabriel de la Gardie, by whom it was presented to the Public Library of Upsala, where it still remains.

The language and age of this version of the Scriptures have been still more a subject of dispute than the manner of its execution. It is commonly called Gothic, and supposed to be the translation made in the middle of the fourth century by Ulphilas, bishop of the Goths,, who then inhabited the country now called Walachia, on the lower part of the Danube. This is still the usual opinion, but several learned men have called it in question; they argue, and we are much disposed to agree with them, that there is no evidence whatever of its being Gothic, and that the presumption is rather in favour of its being Frankish, because the place where it was found was not inhabited by the Goths but was a a portion of the territory of the old Franks. The alphabet is very similar to that of the known existing remains of old Frankish, and two additional characters, found in no other dialect of the German tongue, very nearly amount to a positive evidence of the country and date of the work. Those letters are Ψ and Θ, the first of which, in the Silver Book, stands for *th*, and the last, for *qu*. Now it is stated expressly by Gregory of Tours, a French historian, who lived in the sixth century, that Chilperic, king of the Franks, ordered four letters to be added to the alphabet of their language, and the two letters given above are among the four. As the use of these letters ceased with the life of the monarch who introduced them, the date of the book, if this opinion be well founded, may be ascertained within a short period, Chilperic having died in 584, after a reign of seventeen years. Perhaps in this, as in many other disputes, there may have been truth on both sides; the translation may have been that of Ulphilas, and the copy now existing impressed by a Frank of the time of Chilperic. The language of all these tribes was the same. Procopius in the sixth century, and still more positively Walafrid Strabo in the ninth, asserts this; his words are, "The Goths or Getes who dwelled in the provinces of Greece, when converted to the faith of Christ, used our language, that is the Theotisc . . . they had the Scriptures translated into their own tongue, copies of which are yet in existence." The word Theotisc is nearly identical with Teutsch, the name by which the Germans designate their country and language to this day: and the Franks used a cognate language even in France, as late at least as in the days of Charlemagne.—Whichever way the question may be decided, it must be admitted that the Silver Gospel is one of the oldest books and most curious remains of ancient art known to be in existence.

A fac simile of part of a page of the Silver Book is given at the head of this paper. The four lines shown contain the twenty-fourth and beginning of the twenty-fifth verses of the eleventh chapter of Saint Matthew, with the exception of the first syllable of the twenty-fourth verse, which is in the preceding line, not copied here. The twenty-fifth verse being the beginning of a new subject or section is headed with gold in the original, shown in the fac-simile by dotted letters. The transcription in Roman letters and literal translation will stand thus, supplying the few letters at the beginning and end to make complete sense:—

[Swe] thauh qwitha izuis thatei airthai	Truly I say to you that for the earth
Saudamge sutizo wairthith	of Sodom better it shall be
in dagn stauos thah thus.	in the day of judgment than for you.
Inuh gainamma mela andhaf [Iasus].	In that time [Jesus] answered.

The bottom of the page has been selected for the purpose of showing the ornamental mode of exhibiting what appears to be the parallel passages. The letters RI, on the left of the colonnade, stand for 110, being the number of the sec ion, as at that time the New Testament had not been divided into chapters and verses. The monogram in the first arch, composed of M surmounted by Ψ (th), stands for Matthew, and the letters under it for 109, 110. In the next arch stands JOH, and in the third LUK, with the letters RIB, meaning 112; in the fourth arch is the monogram $\frac{R}{M}$ for Mark. All these letters are of gold; and the effect of the whole, combined with the purple hue of the vellum, is a degree of magnificence which could not have been expected in a work executed at such a period, and which is not often surpassed in our own day of splendid typography.

THE present life overcomes futurity, by being daily with us, as a small object near the eye can shut out the most magnificent prospect beyond.—AIRD.

To play with important truths, to disturb the repose of established tenets, to subtilize objections, and elude proof, is too often the sport of youthful vanity, of which maturer experience commonly repents. There is a time when every man is weary of raising difficulties only to task himself with their solution, and desires to enjoy truth without the labour or hazard of contest.—DR. SAMUEL JOHNSON.

FABLES were suffered to float vaguely through the popular mind of the ancients, but of religious instruction, in our sense of the words, no trace is to be discovered, except amongst the Jewish nation.

IF the evidence of revelation had been weak, why were minds like those of Locke, of Bacon, and of Newton, which boldly destroyed prejudices in science, blind to those in religion?—LORD TEIGNMOUTH.

LIGHT AND DARK MORNINGS.

In the pages of that once almost universal Kalendar, the venerable *Vox Stellarum*, which still annually announces itself as "containing all things fitting for such a work," under the undying editorship of "Francis Moore, Physician," who, regretfully be it spoken, yet holds his oracular sway over the minds of thousands, many of your readers will have noticed a column headed "clock before the sun," or, "clock after the sun." It is well known that a sun-dial and a well regulated clock seldom indicate precisely the same time; and the information contained in the undying editor's table of "the equation of time," is duly appreciated by those who wish to regulate their clocks or watches.

It is not my purpose to give a long or learned dissertation on the subject of the "equation of time*," or to explain at much length the different terms used for denoting time's admeasurement. There is solar, or apparent, time, as shown by a sun-dial; and there is mean time, or true time, as shown by the clock. There is the sidereal day, that is, the time of the earth's revolution on its axis, or the time that elapses between the southing of any star to-night and its coming to the meridian, or southing, the next night, which is 23 hours and 56 minutes; and there is our solar day of 24 hours, that is, 24 hours, on an average, throughout the year.

Then we have the astronomical day, commencing and terminating at noon, computed by 24 hours, (not 12 and 12, as in the solar day;) thus October 12th 16h. 30m. of astronomical time, means ½ past 4 of the morning of the 13th by the ordinary mode of computation; and we have the original, the primeval day, commencing and terminating in the evening, as in the language of Holy Writ, "And the evening and the morning were the first day," which mode of computation is still observed by the Jews, their sabbath terminating on the evening of our and their "seventh day, which is the sabbath of the Lord." At this time, 6 o'clock in the evening, they reopen their shops, which have been closed since 6 o'clock of Friday, and again commence business for the remainder of the Saturday evening, closing them during the Sunday; thus "losing," as some will term it, two days in the week, by continuing to observe their own, as well as the Christian sabbath. May the day speedily approach when they shall come into the true sheepfold.

When at school, we were rightly instructed that, "the sun sets as much after 6 as it rises before, or as much before as it rises after." This is worth remembering: and to such of our younger readers as are not familiar with the rule, we recommend a second perusal. But it applies only to 6 o'clock *solar* time, and not to *true* time: for a person who should suppose, on the 13th of October, for instance, and the 1st of March, (these two days being of equal length,) that the sun will rise at the same time, on each day, by the clock, would find himself just half an hour wrong in his reckoning; as a reference to any Almanac that gives the sun-rise and sun-set in *true*, not *solar*, time, will immediately convince him.

There are only four days in the year on which the clock and sun coincide, viz.,—the 15th of April, the 15th of June, the 1st of September and the 24th of December; and the times of greatest variation are the 10th of February, when the clock is 15 minutes *before* the sun, and the 2nd of November, when it is 16¼ minutes *after* the sun; thus making a difference of half an hour between the two extremes. And to this, as the cause of our "light" or "dark" mornings or evenings, it is my wish to direct the attention of the reader.

It may be seen by referring to any table which gives the time of sunrise and sunset at London, that on the 21st of February and the 21st of October, the sun rises at 52 minutes after 6, *solar* time; now both days being of equal length, (10 hours and 16 minutes,) the sun of course rises at the same hour, *solar* time, each day; and according to the rule previously mentioned, he must set 52 minutes before 6 *solar* time, but if we take the time by the clock, we shall find that he rises half an hour later on the 21st of February than on the 21st of October; for in February the clock is 14 minutes *before* the sun; and consequently, by clock time, he rises 6 minutes after 7, and the mornings are "dark." In October, on the contrary, although the day is the same length, yet the clock being 16 minutes *after* the sun, he rises 36 minutes after 6; and the mornings are "light," and at this season of the year, early risers reap a decided benefit from the phenomenon of nature.

Early rising! Oh that we had more practical acquaintance with this blessing, that we were more alive to the beauties and melodies of the "sweet hour of prime," that we more frequently compelled ourselves to taste the pleasures so rapturously described by the poet,

> The morn is up again, the *dewy* morn,
> With breath all incense, and with cheek all bloom,
> Laughing the clouds away in playful scorn—

To a contemplative mind, and a lover of nature—to one who

> Looks through nature up to nature's God.

the theme is inexhaustible. With heart and soul he adopts Beattie's beatific outburst to the "melodies of morn;" as, with emotions known only to him who can lift his eyes to heaven and say "My Father made them all," he exclaims

> But who the melodies of morn *can* tell?
> The wild brook babbling down the mountain side;
> The lowing herd; the sheepfold's simple bell;
> The pipe of early shepherd dim descried
> In the lone valley; echoing far and wide
> The clamorous horn along the cliffs above:
> The hollow murmur of the ocean tide;
> The hum of bees; the linnet's lay of love;
> And the full choir that wakes the universal grove.

And, adopting the same writer's description of the beauties of morning, say,

> Oh how [can I] renounce the boundless store
> Of charms which nature to her votary yields?
> The warbling woodland, the resounding shore,
> The pomp of groves, the garniture of fields;
> All that the genial ray of morning gilds?

Gentle reader! excuse this digression; and, with one more extract, I will return to the subject of my paper: it is from the pen of a pious lawyer, when, descanting on "the drops of dew hanging from every blade of grass, and reflecting the rays of the sun in a thousand different directions," he says:—"Not a sound was heard, nor a leaf moved, whilst the secret operation was advancing: and what a pleasant emblem does this afford of the influences of the Holy Spirit. How mild, how gentle, how imperceptible have its effusions often been upon our minds!"

To return: it will be seen from what has gone before, that, when the clock is before the sun, the mornings are "dark" and the evenings "light;" and when the clock is after the sun, the mornings are "light," and the evenings "dark." In fact the "equation of time" causes such a variation of time between the clock and the sun, that, on two days of the year, of precisely the same length, the sun may rise half an hour earlier one day than on the other. See 1st of February and 10th of November.

In May and August the equation is reversed; but the variation being less, the phenomenon is of course not so striking.—*From a Correspondent.*

* See *Saturday Magazine*, Vol. XIV., p. 83; Vol. XV., p. 151.

Those that with diligence fight against poverty, though neither conquer till death makes it a drawn battle, expect not, but prevent, their craving of thee: for God forbid the heavens should never rain till the earth first opens her mouth; seeing some grounds will sooner burn than chap.—Fuller.

ON CHESS. XXIII.

THE KNIGHT'S MOVE, *(concluded.)*

WHEN the method of solving the problem of the knight's move, as stated in our last article, is thoroughly understood, the young chess student may pass on to that which constitutes the peculiar feature of Dr. Roget's method, and which confers on it that generality and comprehensiveness never before attained: viz., the power of *ending* as well as of beginning on any *given* square, provided, of course, that the two squares be of opposite colours. When the two given squares are named, the player must attentively notice to what systems they belong: whether both are in diamond systems or in squares, or one in a diamond and the other in a square: also, if both are diamonds, whether the two form parts of the *same* diamond system or not. The determination of these points will decide the mode of procedure. If the two squares belong to the same system, we must depart from one of the instructions given in the last article: we must not complete that system before passing to another, because one square belonging to it is to be the very last of the 64. We must therefore pass on to another system before completing the first one, and it is optional to leave as many as we please, to assist in forming links to conduct to the terminal square. Dr. Roget recommends that one or two squares of the system should be left to the last, but we incline to the opinion that it will be better to leave a greater number,—that is, after covering two or three squares of that system to which the initial square belongs, pass on to the other three systems successively, complete the 48 squares of which they consist, and then cover the remaining 13 or 14 squares of the first system. We will illustrate this by a problem. Required: to commence at the king's rook's square, and to terminate at the king's bishop's 6th square. These two squares belong to the same diamond system; consequently we must pass on to another system before completing this one. In the diagram (fig. 5) we begin at the rook's square, and cover only two squares of the diamond system to which it belongs: we then pass on to a square system, the 16 squares of which we complete; after this we traverse the 16 squares of the other diamond system, and then the 16 of the other square; finally, we cover the remaining 14 squares of the first diamond system, and end at the required position.

If the initial and terminal squares are respectively in the two diamond or the two square systems, another modification is required, arising from the circumstance that the knight cannot pass from one diamond system to the other, nor from one square system to the other. Let the initial square be in one diamond system, and the terminal square in the other. Complete the first diamond system; then one of the square systems; then traverse a *portion* of the second diamond system, omitting that square which is to be the terminal square, as well as some others; after this, cover the second square system; and lastly, traverse the remainder of the second diamond system, ending on the required one. By transposing the words "square" and "diamond" in this description, it will be available for that variety of the problem which begins in one square system and ends in the other.

If the initial square be in a diamond system and the terminal in a square one, or *vice versâ*, the solution is easier than in either of the cases before supposed; because all the four systems can be completely traversed in succession, by bearing in mind that the *second* system traversed must not be that which contains the terminal square.

We have endeavoured to impress on the mind of the reader, that attention to the respective *systems* in which the initial and terminal squares are contained, is the point of most importance in giving a general solution to the varieties of this problem. When this is once attended to, minor difficulties are more readily surmounted. Among these are, the quarter of the board on which the terminal square is situated. Not only must the tour of the knight, in a given problem, end in a particular system, but also in a particular quarter of the board; and as the tour may generally be made from left to right or from right to left at pleasure, we must choose that direction which, while it obeys the conditions of the problem as to systems, shall terminate in that quarter which contains the terminal square. We may illustrate this by referring again to fig. 5. The terminal square is in the right hand upper quarter. After covering 2 squares of the first diamond system, and then traversing the 48 squares which constitute the other three systems, we find the knight in the left hand upper quarter, only two squares distant from the terminal square; and as we have still 14 moves to make, we manage to go into all the other three quarters of the board before arriving at that one which contains the terminal square. In every instance, if the rules which we have given are attended to, and any difficulty arises towards the end of the tour, a reconsideration of a few of the last moves will enable the player to surmount the difficulty. The moves which it is in the power of the knight to make at any given moment, varying from one to eight in number, give such interminable variety to the modes of solution, that the judgment of the player must be exercised as to the choice of the mode of proceeding in each particular instance; but it is only in the last few moves that this judgment is particularly called for, provided the prescribed rules are attended to. Of the number of ways in which the problem can be solved no estimate has yet, as far as we are aware, been made; nor do we know of any means but actual trial by which it could be determined, since the regular arithmetical law of permutation will not here apply. If the squares of the board were numbered from 1 to 64, and these numbers were noted down in the order in which the knight moved, we have very little doubt that this order might be varied in more than a *million* different ways; there are $64 \times 32 = 2048$ modes of varying the initial and terminal squares alone; and in each mode the intermediate moves are susceptible of variation at almost every step of the process.

Such is the result to which Dr. Roget's extremely ingenious investigation enables us to arrive. Until his method appeared, no one, we believe, was able to insure a solution to the problem when both the initial and terminal squares were prescribed; except in the limited instance of a re-entering route, where the terminal square is a knight's move distant from the initial one. By the method which we have just endeavoured to explain, the problem can be solved whether the terminal square be far removed from the initial one, or contiguous to it; the only condition being, that the squares must be of different colours.

To shew the interesting variety of which this problem is susceptible, we will here give three additional representations, each of which possesses some peculiar property capable of being committed to memory: they are partly original, and partly altered from methods already known; and the whole of them differ from Dr. Roget's mode of solution. Fig. 6 is produced by attending carefully to this one simple rule:—*Keep as far from the centre of the board as possible.* In obedience to this direction, the tour of course commences in one corner, no matter which, and every successive move is determined according to the distances, from the centre of the board, to those squares open to the knight; the greatest distance being always chosen. It might appear from this rule, that the terminal square ought to be still nearer to the centre of the board than it is seen to be; but it will be found that in the course of the preceding moves, the four central squares have necessarily become occupied; since

Fig. 5.

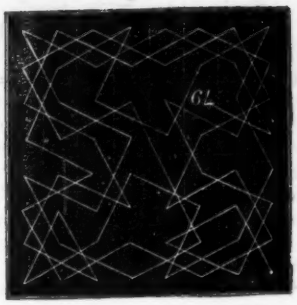


Fig. 6

Fig. 7 (a).

it happens in some cases that there is only one square left open to the knight, and that one may probably be near the centre of the board. No difficulty will occur, provided we adhere strictly to the one rule laid down.

Fig. 7 is produced by adhering to the following rule: *Play the knight to that square where he has least power.* Supposing the board to be unoccupied except by the knight, the reader can easily satisfy himself, that the knight can command 2, 3, 4, 6, or 8 squares, according to his position: if in one corner, he commands only 2 squares; if he be on the knight's square, he commands 3 squares; if on the bishop's square, 4 squares; and as he approaches the centre, the squares commanded are 4, 6, or 8 in number. Now the rule requires, that in every instance the square chosen for the knight's leap be that which, of all those remaining open to the knight, will give him least power. If at any move there are two open squares of equal power in this respect, either one may be chosen. In many points this solution resembles the last, since, generally speaking, the knight has "least power" when "farthest in the centre;" but a comparison of the two figures produced will show that the routes are by no means identical.

Fig. 8 (*a*) is possessed of a most remarkable numerical property, and belongs to a class of problems which would be found fertile in interesting combinations. In order to exhibit this property, we have in a separate diagram or table, fig. 8 (*b*,) numbered the squares in the order in which the knight stepped on them. The tour commences on one of the central squares, which we have marked 1, and terminates on the king's bishop's third, which is therefore marked 64. Now it will be found, that if we select two squares on opposite sides of the centre, and equidistant from it, the *difference of the two numbers occupying those squares will be always equal to* 32. Thus, the opposite corner squares are 16 and 48, 27 and 59; and 48−16=59−27=32: the four central squares are 1 and 33, 14 and 46; and 33−1=46−14=32. In the same way we may select any two squares, provided the centre of the board is precisely

Fig. 8 (*a*).

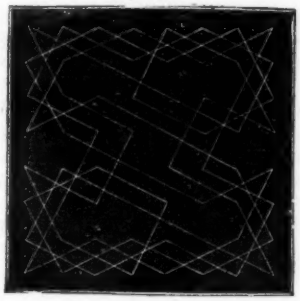


Fig. 9 (*a*)

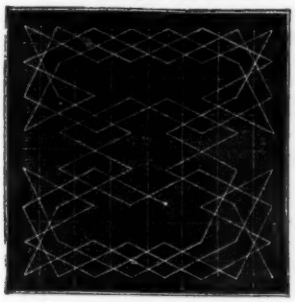


Fig. 8 (*b*.)

48	55	4	29	10	53	6	27
3	30	49	54	5	28	11	52
56	47	32	9	50	13	26	7
31	2	57	46	33	8	51	12
44	19	40	1	14	25	34	63
39	58	45	18	41	64	15	24
20	43	60	37	22	17	62	35
59	38	21	42	61	36	23	16

Fig. 9 (*b*.)

17	8	43	38	15	10	45	36
42	39	16	9	44	37	14	11
7	18	41	48	5	12	35	46
40	49	6	19	34	47	4	13
29	20	63	50	3	22	33	56
62	51	28	21	64	57	2	23
27	30	53	60	25	32	55	58
52	61	26	31	54	59	24	1

between them, and equidistant from them, and we shall find that the smaller number subtracted from the greater will invariably leave 32.

There are other remarkable circumstances connected with this last solution. The route is a re-entering or interminable one, and the figure produced, as seen in fig. 8 (*a*,) is one of the most symmetrical which we have yet given. The route being interminable, may be commenced on any square, and as the initial square must always be marked 1, the distribution of the numbers over the board would vary with the varying of the initial square, every square being affected alike. Now it will be found, that at whatever square the route commences the same numerical law will hold good; there will in fact be 128 modes of varying the order of the numbers, in all of which the same figure will be produced, and the same remarkable law will be observed; because any square out of the 64 may be selected as the initial square, and from each we may begin the route either to the left or the right.

Another example of the maintenance of a particular law throughout the numbers obtained, we will here give

in order to shew the reader how varied may be the results to which he can arrive by a little ingenuity. Fig. 9 (*a*,) is a very pleasing and symmetrical figure, produced by a route of which the numbers are entered in fig. 9 (*b*). If these numbers are examined, it will be found, that the difference of two numbers situated on opposite sides of the centre, and equidistant from it, is 16,—half the amount of constant difference in the last case. This route is not a re-entering one, and we do not think it could be made so, with a constant difference of 16.

The reader will now have had sufficient proof of the diversified solutions of which the knight's problem is susceptible. We have never heard of a chess kaleidoscope, but the instructions we have given will enable him to form one out of the numerous other modes of solution which may be left to his ingenuity to produce. Nor will the study of this subject be without its use to the chess-player; since it not only teaches the art of manœuvring this beautiful piece, but brings the fact into forcible notice, that the knight has less power of moving, and therefore becomes less valuable, when he approaches the corners and sides of the board.

SACRED LITERATURE.

DIVINITY and ethics are the centre round which the national literature of a great, a thoughtful, and enduring people, must ever revolve. The subject-matter of these sciences alone possesses an interest sufficiently steady and intense, to give birth and impart active purpose to great ideas. The literature which rests on taste and manners, is dependant for its charm on those peculiarities which gave it existence. The literature of mere sentiment springs up and perishes, annually, before the sated eye, like other sickly productions of the hot-bed. The literature of classical research is intelligible to few; and being deficient in applicability to the practical realities of life, is almost limited in value to the charm of an exquisite amusement. The pursuits of natural science, though in the highest degree useful and pleasant to man, as inhabiting the world of sense, regard merely his external accommodation, and, with their results, will disappear when "all these things shall be dissolved."

But the literature of divinity and ethics is liable to none of these objections. Rooted, not alone in the truth of things (which is the essential ground of all literature, worth the name), but in Deity itself, its pure themes are fit to be adorned, and never can they be exhausted, by the loftiest inspiration of genius. Not concerned in the external welfare only, and present interests, of mankind, but with men's inmost and immortal well-being, it has a practical value which cannot be over estimated. Making no severe demands upon intellect, no rarer qualification is needed for enjoying it, than ordinary sobriety of mind. Dependant on nothing fluctuating, it possesses equal charms for the wise and good of every period, age, and condition. Whatever is sublime in thought, may be met with in the pages of our sacred writers. Whatever is rich, powerful, noble in elocution, their high majestic themes demand, and have received from them. Whatever is strict in logic and cogent in argument finds here a place and application. Minds of the most various altitude and construction here expatiate in an apt and ample field. The abysmal simplicity of St. John, and the fervent ratiocinative energy of St. Paul,—the eloquence of Chrysostom, and the warmth of Augustine,—the affectionate sweetness of a Leighton, and the exhaustive vigour of a Barrow,—find here more than commensurate employment.

So attractive and absorbing, so high and central are the subjects which this department of literature presents, that all great writers, in proportion as they approach those altitudes of conception and expression, their being able to reach which, marks them great, rush into it, and become, at least for a time, moral and theological teachers. Shakspeare in his most earnest moments was a divine and moralist; Addison and Johnson were often professedly such; to the same sphere the genius of Wordsworth, and even sometimes of Scott,

> Repairing, in their golden urns drew light.

Introductory Essay to Gems of Sacred Literature.

GARDEN HERBS.

TANSEY.

Tanacetum vulgaris, or common tansey, is a well-known native plant. It belongs to the Corymbiferous tribe of the natural order *Compositæ*, and is common in the banks, hedges and borders of fields in most parts of the middle of Europe, and very frequent in England. Linnæus enumerates eight species of this herb. The common yellow-blossom tansey, of which there are three varieties, is said to be a native of Britain. The English name of this plant is either an abbreviation of the Latin, or is derived from the French name, *Tanaise*.

This herb may often be seen growing in churchyards, and it is probable that it was once used as a funeral plant. Boerhaave informs us that the leaves intruded into the mouth and nostrils of a dead body preserve it from decay, and from the attacks of insects; whence the plant has been called *Athanasia*, or the immortal. It is also stated that if meat be rubbed over with tansey the flesh-fly will not deposit its eggs in it.

Tansey has a bitter taste, and an aromatic smell; it was formerly held in regard for warming and strengthening the stomach, for which reason the young leaves obtained a place among culinary herbs, their juice being used in puddings. In Gerard's time they made cakes of the young leaves in the spring mixed with eggs, which were called tansies; "these," he says, "be pleasant in taste and good for the stomache; for if any bad humours cleave thereunto, it doth perfectly concoct them and carry them off. The root preserved in honie or sugar, is an especial thing against the gout, if everie day for a certaine space, a reasonable quantitie thereof be eaten fasting." Boerhaave says: "This balsamic plant may supply the place of nutmegs and cinnamon. For I believe Asia does not afford a plant of greater fragrancy than tansey."

Notwithstanding this high praise, tansey is now but rarely used as a domestic vegetable; our habits, customs, and diet are not those of our forefathers, especially in those times when the season of Lent was strictly observed as a fast. It was then a common practice to make cakes at Easter, of flour, eggs, and the tender leaves of tansey, and these were not only greatly prized, but were thought necessary to be eaten at that season in particular, to relieve the stomach of the real or imaginary ills occasioned by a continued diet of fish and pulse. The custom of eating these cakes at Easter only is greatly censured by Culpeper:—

The world (says he) being overrun with popery, a monster called superstition perks up his head, and, as a judgment of God, obscures the bright beams of knowledge by his dismal looks; (physicians seeing the pope and his imps selfish began to be so too), and now, forsooth, tansies must be eaten only on Palm and Easter Sundays, and their neighbour days. At last, superstition being too hot to hold, and the selfishness of physicians walking in the clouds; after the friars and monks had made the people ignorant, the superstition of the time was found out by the virtue of the herb hidden, and now it is almost, if not altogether, left off. Surely our physicians are beholden to none so much as they are to monks and friars. For want of eating this herb in spring, makes people sickly in summer; and that makes work for the physician. If it be against any man or woman's conscience to eat tansey in the spring, I am as unwilling to burthen their conscience as I, am that they should burthen mine; they may boil it in wine and drink the decoction—it will work the same effect.

Tansey is perennial: it may be easily propagated by seed, and also by parting the roots in spring, and planting them in any sort of light soil or situation.

CHERVIL.

Sweet chervil, or sweet cicely, groweth very like the great hemlock, having large spread leaves cut into divers parts, but of a fresher green colour than the hemlock, tasting as sweet as the aniseed. The stalks rise up a yard high, or better, being cressed or hollow, having leaves at the joints,

but lesser; and at the tops of the branched stalks, umbels or tufts of white flowers; after which come large and long cressed black shining seed, pointed at both ends, tasting quick, yet sweet and pleasant. The root is great and white, growing deep in the ground, and spreading sundry long branches therein, in taste and smell stronger than the leaves or seeds, and continuing many years.

Such is the old Herbalist's description of *Chærophyllum sativum* (natural order *Umbelliferæ*), of botanists. This herb was called Χαιρεφυλλον by the Greeks, either from its numerous leaves, or as the old herbalists suppose from the joy and gladness which they affirm the leaves of this plant produced in those who ate them. The Romans adopted the same word, and called the herb *Chærophyllum*, and in most of the modern languages of Europe, the name of this vegetable is derived from the same source; the Dutch call it *Kervell*, the Germans *Korffol*, the Italians *Cerefoglio*, the French *du Cerfeuil*, and our oldest botanists write it *Cheruill*.

Chervil is a native of the Levant, and various parts of Europe, and is sometimes found in its native state in this country. When young it somewhat resembles parsley; but as it runs to seed, it bears more the appearance of hemlock. The tender leaves are grateful to the palate, especially when used in soups and salads. It is much cultivated by the French and Dutch, who are so fond of it, that they scarcely ever omit it in their soups and salads: and it is considered to be a milder and more agreeable addition to seasonings than the parsley, so generally used by English cooks. Gerard, about two hundred years ago, had an extensive garden in London, in that part of Holborn now called Hatton Garden, and in his *Herbal* he says:—"The great sweet cheruill groweth in my garden, and in the gardens of other men who have been diligent in these matters." He recommends the roots of this plant to be first boiled, and then eaten with oil and vinegar, "which is very good for old people that are dull and without courage; it reioiceth and comforteth the heart, and increaseth their strength."

We select from Mr. Rogers' *Vegetable Cultivator* the method of rearing this useful plant; Chervil is annual, and the seed should be sown to keep up a succession, from the beginning of March till June, at the intervals of about a month, as the younger it is the higher flavour it imparts.

The seed may be sown in shallow drills, from six to nine inches apart, and covered over lightly with the mould; it can also be sown broad-cast and raked in lightly and evenly. If the plants rise thick, a slight thinning will be necessary; and in dry weather a little water will be useful.

To have chervil for use throughout winter, it should be sown towards the end of August in a three or four foot bed, which may be hooped over and the plants protected with mats in frosty weather. The plants remain where sown, and are never transplanted. They are proper for gathering when the leaves are three or four inches in growth, and must be cut off close; they will shoot up again, and may be gathered in succession, though the plants of the spring and summer sowing soon spindle up into seed-stalks, ceasing to produce young leaves, which are the useful parts.

THE WATER-OUZEL.

Cinclus aquaticus.

The remarkable appearance and habits of this bird have excited much popular as well as scientific attention; and as it is very generally dispersed over Europe and capable of enduring all climates, so large a variety of names have been applied to it as frequently to embarrass the student who may desire from books to add to the knowledge gained by observation in the haunts of nature. In Wales this bird is the *Mwyalchen y dwfr;* in the Scotch Highlands the *Gobha uisge;* in England it is called the *Water ousel*, the *Dipper*, the *Penrith ouzel*, the *Water crake*, the *Water crow*, the *Water colly*, the *Bessy Ducker*, and some other names. The Scotch call it the *Water pyet*, the *Water craa*, &c.

The Water Ouzel belongs to the dentirostral division of Cuvier's great order Passeres, and to the thrush family in that order. The bird is dumpy in appearance, but full of energy and activity. The bill is slender, the head and the forehead low; the body is short and compact, the wings short and rounded; the tail is also short, but very thick and strong. Its plumage is thick and close, like that of aquatic birds, and though the bird remains long in the water its plumage does not become wet. The colour of the bird on the head, back, and sides, is deep brown; the rest of the upper part, black: the tail feathers and quills are also black; the throat and breast are white, shading off into reddish-brown towards the under parts, and gradually becoming deeper in hue towards the extremity of the tail: the bill is dark brown, and the feet yellowish-grey. The markings are nearly the same in both sexes. The markings in the young birds appear to be subject to variation.

The water ouzel loves to haunt the rocky wilds of almost any northern clime; it seems not to care for the vicissitudes of heat and cold, and provided it can be near water that is not frozen it is cheerful and happy. The deep and rugged channels worn by the mountain streams which dash on against opposing rocks, or amidst loose stones, are the favourite resorts of the water ouzel.

> . . . . . The bird
> Is here,—the solitary bird, that makes
> The rock his sole companion. Leafy vale,
> Green bower, and hedge-row fair, and garden rich
> With bud and bloom, delight him not;—he bends
> No spray, nor roams the wilderness of boughs,
> Where love and song detain a million wings,
> Through all the summer morn—the summer eve;—
> He has no fellowship with waving woods,—
> He joins not in their merry minstrelsy,—
> But flits from ledge to ledge, and through the day
> Sings to the Highland waterfall, that speaks
> To him in strains he loves, and lists
> For ever.—Carrington.

The habits of the water ouzel are retiring: when it becomes observed by the traveller, it flits from stone to stone, chirping and appearing as if incapable of flight. If pursued it appears scarcely to make an effort to avoid capture, and yet it is seldom or never captured. The traveller, secure of his prey, gives chase; the bird is almost within reach; it flirts its tail, and every now and then jerks round, as if half astonished, half inviting.

So onward they fare (says the writer of the agreeable sketches of the *Feathered Tribes of the British Islands*) till they come to a bolder and tougher stratum, which has obstructed the stream, but at the same time given it fall and force to scoop out a pool below, which though it boils where the cascade plunges (or rather where it rises again), is placid compared with the brawlings that have been passed. The water merely laves a beach of clean pebbles, the rocks on the other side are "sky high," without footing even for a bird, and the *breast*, over which the water dashes, seems too high for a thing so hopping and badly-winged. The bird halts on the beach, and forward the traveller rushes, hat in hand, to the capture, but the wet stones are treacherous, endlong he falls, dips himself, and rising sees the hat which was to capture the bird, whirling round and round in the eddies. The bird too has vanished—it is "a sprite" to wile him into peril. But it soon "bobs" to the surface, at the lower end of the pool on the other side, with its feathers dry without any shaking of the water, and leaping first on one stone and then another, it descends the ravine with the same nonchalance that it ascended. To recover the hat is a much more arduous matter than to lose the bird, but that too may be accomplished with one of the long suckers of hazel, which grow from the tangled and gnarled stool on the bank, though if the hold be not taken warily, and kept carefully, there may be a second dipping—and yet no dipper to boast of.

The manner in which the water ouzel seeks its food is very remarkable, and does not seem to have been gene-

rally known until the communication of M. Hebert to the Count de Buffon excited the attention of naturalists.

I lay ambushed (says he) on the verge of the lake Mantua, in a hut formed of pine-branches and snow, where I patiently waited till a boat, which was rowing on the lake, should drive some wild ducks to the water's edge. I observed without being perceived: before me was a small inlet, the bottom of which gently shelved, and might be about two or three feet deep in the middle. A water ouzel stopped here more than an hour, and I had full leisure to view its manœuvres. It entered into the water, disappeared, and again emerged on the other side of the inlet, which it thus repeatedly forded. It traversed the whole of the bottom, and seemed not to have changed its element, and discovered no hesitation or reluctance in the immersion. However, I perceived several times, that as often as it waded deeper than the knee, it displayed its wings, and allowed them to hang to the ground. I remarked too that when I could discern it at the bottom of the water, it appeared enveloped with air, which gave it a brilliant surface, like some sorts of beetles, which are always in water, enclosed with a bubble of air. Its view in dropping its wings on entering the water might be to confine this air: it was certainly never without some, and it seemed to quiver: these singular habits of the water ouzel were unknown to all the sportsmen whom I talked with; and perhaps without the accident of the snow-hut I should have ever been ignorant of them; but I can aver that the bird came to my very feet, and, that I might observe it, I did not kill it.

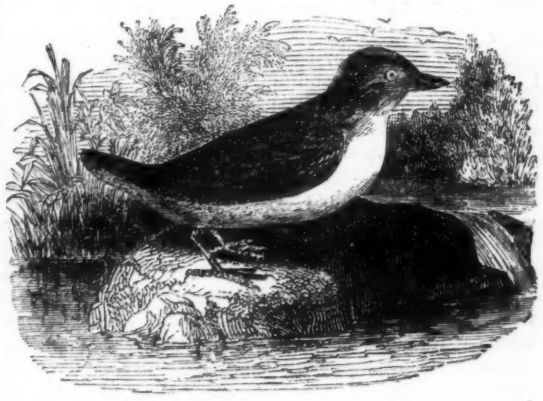
The quivering motion of the wings spoken of in the above extract is simply an upward stroke tending to keep the body down, in opposition to any difference in gravity between the bird and an equal bulk of water. As soon as the bird enters the water it elevates its head and raises its wings, and thus depresses the body; and this is done so easily and so rapidly that the bird runs down the bank to the bottom of the stream with apparently no greater effort than would be required for simple motion on dry land. A moment's reflection will make it appear less wonderful that a bird should be able to remain beneath a fluid which, bulk for bulk, is heavier than itself, than to sustain itself in the air, which, bulk for bulk, is so very much lighter than itself. In flying, the bird sustains itself by the downward stroke of t e wings, and the water ouzel pursues its food in the water by adopting a process the very reverse of flying.

This bird feeds on water insects, larvæ, worms, dragon flies, water beetles, and most of the animal substances which occur in water. It delights in those little pools between the rapids where the trout deposits its spawn: this, as well as the spawn of the salmon, is a favourite food for the water ouzel and its young. When the banks are covered with snow, and most other birds are to a great extent deprived of the means of procuring food, the water ouzel, perched on a stone in the brook, sings to the tune of many waters, and fears nothing but ice, which locks up its source of food, and deprives it of its retreat from terrestrial dangers. But as soon as the ice has disappeared, it is again independent and happy. It is not often, however, that the bird is "frozen out," because it prefers the dells among the secondary hills near the low country, where springs occur which, breaking out from a considerable depth, seldom freeze, and in which the young of many little animals supply it with food.

The water ouzel breeds early in the season; the eggs are of a beautiful white, and not more than five in number. The young birds are of quick growth; they are great feeders and are constantly chirping after food in the absence of their parents. The building of the nest is begun early in the season; it is constructed with much labour, and is formed on the outside generally of moss, which is kept green by the moisture of the place, so that it has the appearance of a natural mossy tuft: it is lined with such dry leaves or fibres as the place affords: it is covered with a sort of dome, and has an opening in the side. The situation of the nest is often under a projecting stone in a hole of the rock, or even in a hole in a wall, provided the situation be sufficiently retired and near the water. The structure of the nest, however, is differently described by different naturalists, and it may vary according to local circumstances. Mr. Rennie speaks of having found a nest of this bird at Sorn Cleugh, in Ayrshire, which he describes as a romantic spot, where thickly-wooded rocks of variegated sandstone rise for several hundred feet on each side of a small brook, approaching in some parts so near that the sunbeams cannot reach the channel below. By the side of a large block of sandstone, which had fallen into the stream from the over-hanging cliff, in one of those darkened corners, a pair of water ouzels had built their nest. The block in its fall had dragged down with it an old moss-grown hazel, whose roots were plentifully clothed with lady-fern, sweet woodroof, and a profusion of green moss. These convenient materials were employed by the birds for the frame-work of their fabric, which was neatly arched over with a withered fern-leaf, and over this was placed a warm coating of green moss with a few chips of the woodroof. The lining was of similar materials, but of finer quality and more smoothly arranged. It was so near the edge of the stream, that it must have been overflowed, had a flood occurred, as is not unusual from its vicinity to the Clomfort range of hills. The water ouzel is said by Bewick sometimes to nestle behind a waterfall, when it overshoots a steep rock, and thus leaves a vacant space; and Mr. Rennie's observation seems to confirm the statement; for he has "watched a pair of these birds flitting stealthily out and in from such a locality at a small linn in the moors above Wemyss Bay, Refrewshire;" but the force of the falling stream prevented him from getting sufficiently near to discover the nest.

Montagu discovered one of these nests under a small wooden bridge in Caermarthenshire: the nest was built with hay, fibres and moss, and lined with dry oak leaves. The nest was captured, but within a fortnight another was constructed in the same place: this was also taken; a third was constructed, and we regret to add that the persevering little architects were a third time plundered. The same naturalist gives another example of a nest which he found in a steep mossy bank projecting over a rivulet; and from the facility with which moss could be procured, the nest so closely resembled a portion of the bank, that it could not have been discovered but for the parent birds being observed carrying in fish to their young.

The water ouzel sings only during the early part of the year: its summer note is but a mere chirp.



The cheerful bird that loves the stream
And the stream's voice, and answers, in like strains,
Murmuring deliciously.

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